

USSR

UDC 615.217.32:547.333.
4.015.11

KHARKEVICH, L. A., SKOLDINOV, A. P., and MEADOVA, D. N., Laboratory of Nervous System Pharmacology and the Laboratory of Organic Synthesis, Institute of Pharmacology, Academy of Medical Sciences USSR, and the Department of Pharmacology, Faculties of Medicine and Public Health, 1st Moscow Medical Institute imeni I. M. Sechenova, Moscow

"The Effects of Adamantyl Radicals on the Mechanism of Cholinergic Action of Mono-Quaternary Ammonium Compounds"

Moscow, Farmakologiya i Toksikologiya, Vol. 36, No 2, 1973, pp 201-205

Abstract: It has been demonstrated that adamantyl radical may alter the properties of curariform drugs, when substituted on the quaternary nitrogen atom. Present studies were performed to test the universality of this phenomenon by preparation of 1-adamantyl analogs of tetramethyl ammonium, choline, and acetylcholine, and testing them biologically. The studies were conducted on pigeons and chicks that had been intravenously injected with the appropriate compound and the nature of resultant paralysis was noted, on the rectus abdominis muscles of frogs to determine contractility, and on cats under anesthesia (intravenous chloralose, 60 mg/kg, and urethane, 400 mg/kg) to determine transmission across the myoneural junction of impulses from the sciatic nerve to the gastrocnemius muscle. The substituted compounds were

1/2

USSR

KHARKEVICH, D. A., et al., Farmakologiya i Toksikologiya, Vol 36, No 2, 1973, pp 201-205

found to induce flaccid rather than spastic paralysis in the chicks and pigeons, did not cause contraction of the rectus abdominis muscles, or fasciculation of the gastrocnemius. Similar results were obtained with l-adamantyl esters of acetic, benzoic, and cinnamic acids. The data were taken to indicate that introduction of l-adamantyl not only changes the respective compounds from depolarizing to nondepolarizing compounds, but also through its lipophilic property affects the attachment of the compounds on the subsynaptic membrane and subsequent hydrophobic interaction with the choline receptors.

2/2

USSR

UDC 615.216.5:547.581.2/.036.8.07

KHARKEVICH, D. A., SKOLDINOV, A. P., and IBADOVA, D. N., Laboratory of the Pharmacology of the Nervous System and Laboratory of Organic Synthesis, Institute of Pharmacology, Academy of Medical Sciences USSR; Chair of Pharmacology of the Therapeutic and Sanitary Hygiene Faculties of the First Moscow Medical Institute imeni I. M. Sechenov, Moscow

"The Myoparalytic Activity of Mono-Quaternary Ammonium Derivatives of Benzoic Acid Esters"

Moscow, Farmakologiya i Toksikologiya, Vol 36, No 1, Jan/Feb 73, pp 44-48

Abstract: Animal experiments showed that mono-quaternary ammonium derivatives of benzoic acid esters of the type $\text{PhCOO}(\text{CH}_2)_n\text{NMe}_3^+\text{I}^-$ had a pronounced curariform activity. The optimum effect was produced at $n = 4$. The activity was enhanced by introducing suitable substituents into the phenyl ring. The substituents that produced the optimum effect in this respect were SO_2NMe_2 and NO_2 in the para-position. Introduction of MeO or Cl into the ring produced the activity. The compounds in question produced a short-lived depolarizing effect. Proserine generally did not reduce the action of these compounds, but in many cases enhanced it. Replacement with NH of the O atom in the CO group reduced the myoparalytic activity. Replacement with an adamantyl radical of $1/2$

USSR

KHARKEVICH, D. A., et al., Farmakologiya i Toksikologiya, Vol 36, No 1,
Jan/Feb 73, pp 44-48

one of the Me groups at the quaternary N changed the mechanism of action to one of the non-depolarizing type and also reduced the myoparalytic activity. The adamantyl derivatives reduced or prevented entirely the stimulating effect of acetylcholine and carbacholine on the muscle. In experiments on cats proserine acted as an antagonist of these derivatives.

2/2

USSR

UDC 615.216.5:547.629.2

ARENDAUK, A. P., SKOLDINOV, A. P., KHARKEVICH, D. A., and CHERNYKH, N. A.,
Scientific Research Institute of Pharmacology, Academy of Medical Sciences USSR,
Moscow

"Studies in the Cyclobutanedicarboxylic Acid Series. VII. Synthesis and
Curareform Activity of Bicquaternary Salts of Alkamine Esters of p,p'-Substi-
tuted α -Truxillic Acids"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 6, No 9, Sep 72, pp 5-9

Abstract: The article describes the synthesis and testing (in the form of
dimethiodides) of analogs of anatruxonium containing in the phenyl nuclei sub-
stituents differing in their electronic nature, viz. p,p'-dinitro, p,p'-dimethoxy
and p,p'-dihydroxy groups. Pharmacological tests of the resultant compounds
showed that they all possess pronounced curareform activity. The most effective
curareform agent is anatruxonium. Replacement by the nitro, methoxy or dioxy
group reduces the myoparalytic activity.

1/1

- 27 -

2

USSR

UDC 615.216.5:[547.586+547.581.2

ARENDAK, A. P., SKOLNICOV, A. P., SMIRNOVA, N. V., KHARINICH, D. A.,
TSVETKOVA, G. I., and SHARAYAN, N. I., Scientific Research Institute of
Pharmacology, Acad. Med. Sc. USSR, Moscow, I Moscow Medical Institute named
I. M. Sechenov

"Curareform Activity of the Monoquaternary Salts Containing the Adamantyl
Radical at the Nitrogen Atom"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 6, No 4, Apr 72, pp 8-13

Abstract: A series of methiodides of alkylaminoesters of benzoic and cinnamic
acids has been synthesized in an attempt to lower the depolarizing; neuromuscular
blocking activity of the parent compound. Replacing a methyl group at the
nitrogen atom with an 1-adamantyl group did indeed change the depolarizing;
blocking of parent compounds to nondepolarizing activity; at the same time the
curareform activity dropped 200-300 fold. Changes in the length of the alkyl
radical between the acid group and nitrogen atom as well as substituents on the
aryl ring showed no effect on this activity. The modification due to the
adamantyl radical appeared to be general in nature. It is proposed that this
specificity is due to the high lipophilic property of the adamantyl radical
rather than to its bulk alone.

1/1

Pharmacology and Toxicology

USSR

UDC 541.69+547.689+547.235+
612.814+615.785.3

KHARKEVICH, D. A.; SKOLDINOV, A. P.; Institute of Pharmacology,
Academy of Medical Sciences USSR, and First Moscow Medical
Institute imeni I. M. Sechenov

"The Effect of Lipophilic Radicals in the Molecule of Curariform
Substances on Their Mechanism of Action"

Moscow, Doklady Akademii Nauk SSSR, Vol 198, No 4, 1971, pp
985-988

Abstract: The possibility of altering the mechanism of action
of muscle relaxants and other cholinergic compounds by using
the lipophilic adamantyl radical to screen the quaternary nitro-
gen atoms was studied. The following groups of compounds were
tested: (a) monoquaternary ammonium derivatives of cinnamic
acid, (b) decamethonium and succinylcholine analogs, and (c)
acetylcholine and tetramethylammonium analogs. All the compounds
displayed a similar behavior, i.e., substitution of the adamantyl
radical for the N-methyl group converted them from depolarizing
(cholinomimetic) to nondepolarizing (cholinolytic) agents. This
change is attributed to enlarging of the radicals screening the
nitrogen atoms.

1/1

USSR

KHARKEVICH, D. A., Chair of Pharmacology, Therapeutic and Sanitary Hygiene Faculty, First Moscow Medical Institute imeni I. M. Sechenov

"Anatruxonium -- A New Antidepolarizing Curariform Preparation"

Moscow, Novoye v Diagnostike, Lechenii, Profilaktike Vazhneyshikh Zabolevaniy i Metodakh Issledovaniya (News in Diagnosis, Treatment, and Prophylaxis of the Most Important Diseases and Methods of Investigation, Ministerstvo Zdravookhraneniye SSSR, 1971, 128 pp, pp 86-87

Abstract: Anatruxonium is a synthetic curariform preparation. It is a white powder with a yellowish tint soluble in water at a ratio of 1:200.

Anatruxonium belongs to a group of most active myorelaxants. It surpasses tubarine by a factor of 3-5 times. Its effect is potentiated and prolonged when used on a background of ether and fluothane. Barbiturates, nitrous oxide, and cyclopropane
1/3

- 57 -

USSR

KHARKEVICH, D. A., Novoye v Diagnostike, Lechenii, Profilaktike
Vazhneyshikh Zabolevaniy i Metodakh Issledovaniya, 1971, 128
pp, pp 86-87

have practically no effect on anatruxonium activity. Some sinus tachycardia can be noted when anatruxonium is applied. The preparation is of low toxicity and its therapeutic spectrum is considerable. Proserine and its analogous anticholinesterase preparations are antagonistic to anatruxonium.

Anatruxonium is indicated for use as a myorelaxant during surgery when total or partial myorelaxation is required. Intubation is accomplished against a background of ditiline or its analogs, and only after intubation is completed is anatruxonium administered intravenously. The application of anatruxonium for intubation is inadvisable because of the large doses required. The abdominal wall muscles remain relaxed longest under the influence of anatruxonium; spontaneous respiration may be retained or depressed for a brief period. The dose of the preparation used as a myorelaxant for periods of 40 to 60 minutes (against a background of ether anesthesia) is 0.1-0.12 mg/kg.

2/3

USSR

KHARKEVICH, D. A., Novoye v Diagnostike, Lechenii, Profilaktike
Vazhneyshikh Zabolevaniy i Metodakh Issledovaniya, 1971, 128
pp, pp 86-87

Respiration at this dose is depressed for 15-20 minutes. Regulated or artificial respiration is necessary during this period. The dose required for total relaxation with apnea for a period of 60-120 min is 0.15-0.2 mg/kg. Repeated doses begin with 1/2 to 1/3 of the initial dose. The dose for children is 0.3-0.5 mg/kg. If the response is inadequate, the dosage is gradually increased (in amounts of 0.01-0.02 mg/kg) at intervals of no less than 5-10 min.

Anatruxonium is supplied in ampules (0.3% in 2 ml). Anatruxonium solutions and powder are very stable, but should be stored with caution (list A) in light-proof places. Anatruxonium has been synthesized, investigated, and is recommended for use in medical practice by the Institute of Pharmacology of the Academy of Medical Sciences USSR and the Chair of Pharmacology, Therapeutic and Sanitary Hygiene Faculty of the First Moscow Medical Institute imeni I. M. Sechenov.

3/3

58

USSR

KHARKEVICH, D. A., (Editor)

Novyye Kurarepodobnyye i Ganglioblokiruyushchiye sredstva (New Curariform and Ganglion-blocking Agents), Moscow, "Meditsina", 1970, 271 pp

CONTENTS

	<u>PAGE</u>
Preface	5
ZAKUSEV, V. V., Introduction	7
KHARKEVICH, D. A., "On the Main Trends in Searching for New Curariform and Ganglion-blocking Agents"	13
NEW CURARIFORM AGENTS	
ARENDARUK, A. P., and SKOLDINOV, A. P., "Synthesis of Compounds with Curariform Action on the Basis of Alkaloid Thesine Structures"	24
KHARKEVICH, D. A., "Experimental Data on the Curariform Properties of the Bis-quarternary Ammonium Derivatives of Diphenyl-cyclobutane Dicarboxylic Acids"	35
KRAVCHUK, L. A., "On the Duration of the Curariform Effect of the Bis-quarternary Ammonium Derivatives of Truxillic Acids"	41
KHARKEVICH, D. A., "Pharmacology of the New Anti-depolarizing Agents - Anatruxonium, Cyclobutonium, Truxylonium and Pyrocyclonium"	48

1/ 6

USSR

KHARKEVICH, D. A., New Curariform and Ganglion-blocking Agents, Moscow, "Meditsina", 1970, 271 pp

LEPAKHIN, V. K., "Sensitivity of Different Muscles to Alpha-truxillic Acid Derivatives"	63
MURATOV, V. K., SINITSIN, L. N., USPENSKY, A. E., and KHARKEVICH, D. A., "On the Influence of Neuromuscular Blocking Agents on the Central Nervous System"	72
KOTOMINA, G. L., "Comparative Clinical Evaluation of New Myorelaxants Belonging to the Group of Diphenyl-cyclobutan-dicarboxylic Acid Derivatives"	83
MIKHelson, V. A., "Clinical Evaluation of Muscle Relaxants of α -truxillic Acid Derivatives"	90
KUSIN, M. J., and NADJARIAN, T. L., "Clinical Pharmacology of a Muscle Relaxant-Truxilonium"	103
FIRSOV, A. A., and STAZHADZE, L. L., "The Experience of Employing a New Muscle Relaxant, Truxilonium"	107
TSYBULYAK, G. N., "The Evaluation of Truxilonium in Anticonvulsant Therapy of Tetanus"	111
KUZIN, M. I., LYTKIN, U. J., SACHKOV, M. J., BOGDANOVA, E. A., and NADJARIAN, T. L., "Comparative Characteristics of Muscle Relaxants of the α -truxillic Acid Group"	120

2/6

USSR

- KHARKEVICH, D. A., New Curariform and Ganglion-blocking Agents, Moscow, "Meditsina", 1970, 271 pp
- ERIVANTSEV, N. A., ELSHANSKY, V. I., and BRUSENKO, E. JA., "The Experience of Clinical Use of Anatruxonium in Surgery" 126
- FIRSOV, A. A., and STAZHADZE, L. L., "The Results of Clinical Trials of a New Muscle Relaxant, Anatruxonium" 132
- MANEVICH, A. Z., FOMINIH, V. P., PETROV, M. V., and TUKOV, V. L., "On the Use of Anatruxonium in Pediatric Anesthesiology" 137
- NADJARIAN, T. L., and ERIVANTSEV, N. A., "On the Use of Truxylonium and Anatruxonium in Geriatrics" 147
- DOLINA, O. N., and PTUSHKINA, S. G., "Employment of Anatruxonium and Cyclobutonium in Operations on Organs of the Abdominal Cavitiform" 152
- FIRSOV, A. A., ZHILIS, B. G., and STAZHADZE, L. L., "The Experience of Employment in Anesthesiology of a Muscle Relaxant Cyclobutonium" 159
- TER-KASPAROVA, N. JA., "Curarization by Cyclobutonium" 164
- BARSUKOV, P. JA., "Employment of Cyclobutonium During Endotracheal Ether-Oxygen Anesthesia in Gynecological Practice" 167

3/ 6

USSR

KHARKEVICH, D. A., New Curariform and Ganglion-blocking Agents, Moscow, "Meditsina", 1970, 271 pp

ARENDARUK, A. P., GRACHEVA, E. A., SKOLDINOV, A. P., and KHARKEVICH, D. A., "On the Synthesis and Curariform Activity of Mono-quarternary Ammonium Salts of Basic Esters of Cinnamic Acid and Some Derivatives and Analogues" 179

NEW GANGLION-BLOCKING AGENTS

LIHOSHERSTOV, A. M., LEBEDEVA, A. S., KRITSIN, A. M., SKOLDINOV, A. P., and KHARKEVICH, D. A., "On the Relationship Between the Structure and Pharmacological Activity in the Series of Bis-quarternary Salts of Some Dialkylaminoalkyl Esters of the α -azacycloalkyl-acarbonic Acids" 191

KHARKEVICH, D. A., LEBEDEVA, A. S., LIHOSHERSTOV, A. M., and SKOLDINOV, A. P., "Synthesis and Pharmacology of Hygronium - a New Short-acting Gangliolytic" 197

SOLOVJOV, I. K., "A Comparative Evaluation of the Clinical Application of Arfonad and Hygronium in Operations on the Major Vessels" 200

KHUDOSHIN, V. K., TRESHCHUNSKY, A. I., and GRYGORJEVA, K. N., "The Influence of Hygronium and Arfonad upon Oxidative Phosphorylation in Animal Tissues" 202

4/6

USSR

KHARKEVICH, D. A., New Curariform and Ganglion-blocking Agents, Moscow, "Meditsina", 1970, 271 pp

- UMANSKY, M. A., TRESHCHYNSKY, A. I., KUTZENKO, T. A., KHUDOSHIN, V. K.,
 "The Influence of Hygronium on Anticoagulation System Activity" 205
- BUNATIAN, A. A., MESHCHERIAKOV, A. V., KURATEV, L. V., and CHISTIAKOV, V. N., "Employment of Hygronium During operations on the Heart and Large Vessels" 211
- MISTACOPOULO, N. P., and PARFENOV, A. P., "Evaluation of the Ganglion-blocking Action of Hygronium in Operations on the Major blood Vessels in Patients with Marked Arterial Hypertension" 218
- KIJAIEV, V. J., ERIVANTSEV, N. A., ELSHANSKY, V. J., and SPIRING, V. G., "Comparative Evaluation of Artificial Hypotension Induced by Arfonade and Hygronium in Operations on Diffuse Hemangioma" 221
- KANDEL, E. I., NIKOLAENKO, E. M., and SALALIKIN, V. I., "Experience of Hygronium Application in Neurosurgery" 228
- KANDEL, E. I., and NIKOLAENKO, E. M., "The Effect of Hygronium Induced Ganglionic Blocking on Hemodynamics and Gas Metabolism in Neurosurgical Operations" 238
- RUMJANTSEV, V. B., "The Use of a Ganglion-blocking Agent, Hygronium, in Pleuropulmonary Operations in Patients with Tuberculosis" 244

5/6

USSR

KHARKEVICH, D. A., New Curariform and Ganglion-blocking Agents, Moscow, "Meditsina", 1970, 271 pp

VANINA, L. V., BEILIN, A. L., GAIDAMAKINA, I. G., MITIASHINA, S. S.,
"On the Application of Hygromium in Obstetrical Practice" 246
KHARKEVICH, D. A., "On the Pharmacological Properties of Branched
Aliphatic Amines" 252
KHARKEVICH, D. A., "On the Pharmacological Properties of Heptamine - a
Long-acting Gangliolytic" 256
MAISKY, V. V., "On the Effect of Heptamine on the Central Nervous
System" 261

References 262

USSR

UDC 615.787

KHARKEVICH, D. A., Corresponding Member, Academy of Medical Sciences
USSR and SKOLDINOV, A. P., Candidate of Chemical Sciences

"New Antagonists of Acetylcholine"

Moscow, Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva imeni D. I.
Mendeleyeva, Vol 15, No 2, 1970, pp 145-155

Abstract: This article is a very broad review of the literature on the subject of acetylcholine, cholinergic processes and their inhibitors, and antagonists of acetylcholine. Among the anti-cholinergic substances are included relaxants, antispasmodics, anticonvulsants, myorelaxants with central and peripheral action, and anesthetics. However all these are considered from the point of view of their curareform effect: depressants, inhibitors ganglio, blocking agents, synaptic connections, and myoneural junctions. The basic problem that should be studied is the chemoreceptor mechanism, solution of which would lead to a better understanding of the physiology and pharmacology of cholinergic functions and, consequently, to the production of suitable medicines.

1/1

USSR

UDC 615.216.5.015

KHARKEVICH, D. A., Institute of Pharmacology, Acad. Med. Sc. USSR, and Chair of Pharmacology at the Clinic and Sanitation-Hygiene Faculty I Moscow Medical Institute imeni I. M. Sechenov

"Pharmacological Properties of a New Antidepolarizing Curare-Like Agent Diadonium Diiodide"

Moscow, Farmakologiya i Toksikologiya, Vol 33, No 5, Sep-Oct 70, pp 531-536

Abstract: A new curare-like agent -- diadonium diiodide [bis-(N-methyl N-adamantylaminoethylsuccinic acid)] -- was studied. It is an active non-depolarizing muscle relaxant producing the symptoms of head drop in rabbits at doses of 130-180 γ /kg. In cats it blocks transmissions from the sciatic nerve to the gastrocnemius muscle when administered in doses 250-350 γ /kg. Ether intensifies and prolongs the myoparalytic action of the drug. Diadonium exerts a short, weak effect on blood circulation; it is capable of averting an adverse chronotropic action of acetylcholine on the heart, without prejudicing the hypotensive effect of acetylcholine. It has low toxicity and broad therapeutic range. Proserine is an antagonist of diadonium.

1/1

USSR

UDC 591.488.4-135.044:597.82

VINNIKOV, Ya. A., GAZENKO, O. G., TITOVA, L. K., COVARDOVSKIY, V. I.,
GRIBAKIN, F. G., BRONSHTEYN, A. A., PEVZNER, R. A., ARONOVA, M. Z.,
MASHINSKIY, A. L., PAL'MBAKH, L. R., IVANOV, V. P., TSIRULIS, T. P.,
KHARKEYEVICH, T. A., and PYATKINA, G. A., Laboratory of Evolutional
Morphology, Institute of Evolutionary Physiology and Biochemistry imeni
I. M. Sechenov, Academy of Sciences USSR, Leningrad

"Development of the Vestibular Apparatus (Labyrinth) of the Frog *Rana temporaria* in Weightlessness"

Leningrad, Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, Vol 8, No 3,
May/Jun 72, pp 343-350

Abstract: To study the effect of weightlessness on development of vertebrate vestibular apparatus, 43-hour artificially fertilized *Rana temporaria* eggs were subjected to a 40-hour flight in the Soyuz-10, after which they were fixed and observed with an electron microscope. Embryos in the early gastrula stage were used to ensure that takeoff acceleration was experienced prior to establishment of definitive vestibular apparatus, in light of evidence that acceleration does have considerable impact on receptor cell development at the later stages. Normal development proceeded to the tail bud stage during

1/2

USSR

VINNIKOV, Ya. A., et al., Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, Vol 8, No 3, May/Jun 72, pp 343-350

the flight, as it did in control embryos, and no differences were detected in development of the presumptive otocysts and the eighth ganglion. Morphology is described in detail, the main feature being the beginning of differentiation of receptor and support cells in the presumptive otocysts and of bipolar neuroblasts in the eighth ganglion. Thus weightlessness has no effect on development in general and on differentiation of the future vestibular apparatus in frog embryos.

2/2

- 66 -

USSR

UDC 546(83-882)261,548.55

FUNKE, V. F., PSHENICHNYI, I. V., KRUGLOV, V. N., and KHARKHARDIN, YE. D.

"Substructure and Nature of the Destruction of Zirconium and Niobium Single Crystals"

Moscow, Neorganicheskiye Materialy, Vol 9, No 12, 1973, pp 2151-2155

Abstract: Results are presented from a study of the substructure, brittleness, plasticity, and microhardness relative to the crystalline characteristics of ZrC and NbC single crystals at room temperature. Analyses were made using selective etching and micro-x-ray techniques; analytical procedures are given for each parameter. These crystals are anisotropic with regards to brittleness, plasticity, and microhardness. The planes of maximum and minimum values are given. The degree of brittleness is relative to the orientation of the basal layers and increases in the order (111), (110), and (100). NbC is characterized by a higher degree of plasticity and a smaller degree of anisotropy in the rigidity among the crystallographic surfaces than for the ZrC.

1/1

- 37 -

(2) 013 UNCLASSIFIED PROCESSING DATE 2000/11/0
TITLE—IMPARTING COLOR TO COPOLYMER AND FIBERS BASED ON POLYACRYLONITRILE

—U—
AUTHOR—(05)—KOVZHIN, L.A., KIRPICHENKO, T.R., GLAZOMITSKIY, K.L., ROSKIN,
YE.S., ~~KHARKHAROV, A.A.~~
COUNTRY OF INFO—USSR

SOURCE—IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(1),
109-12
DATE PUBLISHED—70

SUBJECT AREAS—MATERIALS

TOPIC TAGS—DYE, COPOLYMER, POLYACRYLONITRILE FIBER, ACRYLATE, AMIDE

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRA--2000/0975

STEP NO—UR/0153/70/013/001/0109/0112

IRC ACCESSION NO—AP0124634

UNCLASSIFIED

2/2- 5013

UNCLASSIFIED

PROCESSING DATE—30OCT70

IRC ACCESSION NO—AP0124634

ABSTRACT/EXTRACT—(U) GP-0- ABSTRACT. ACRYLONITRILE
METHYLOLMETHACRYLAMIDE COPOLYMER (I) WAS DYED WITH H SUB2 O SOL. DYES
DURING THE COPOLYMERIZATION OF THE RESPECTIVE MONOMERS IN AQUEOUS SODIUM CYANIDE SOLUTION. DYED I
EXHIBITED EXCELLENT LIGHT FASTNESS (COMPARABLE TO THAT OBTAINED BY
DYEING POLYMER FIBERS WITH FIBER REACTIVE DYES). THE PHYSICOMECHANICAL
PROPERTIES OF DYED I FIBER WERE ESSENTIALLY UNCHANGED. AN EFFECTIVE
TECHNIQUE WAS DEVELOPED FOR THE RECOVERY OF DYES FROM THE SETTING BATH.

FACILITY: LENINGRAD. INST. TEKST. LEGK. PROM. IM. KIROVA,
LENINGRAD, USSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--DYEING OF MIXTURES OF CELLULOSE POLYAMIDE FIBERS BY DIRECT
LIGHTFAST DYES -U-
AUTHOR--DEMIDOVA, E.N., YERSHOV, A.P., KHARKHAROV, A.A.
COUNTRY OF INFO--USSR
SOURCE--TEKST. PROM. (MOSCOW) 1970, 30(1) 86
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--DYE, CAPRONE, CELLULOSE RESIN, POLYAMIDE RESIN, SYNTHETIC
FIBER, NATURAL FIBER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1982/1067 STEP NO--UR/0342/70/030/001/0086/0086
CIRC ACCESSION NO--AP0052433
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0052433

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. A DYEING PROCEDURE IS RECOMMENDED FOR KAPRON COTTON BLENDS WITH DIRECT DYES. DIRECT YELLOW 2K, DIRECT RED S, AND DIRECT BLUE WERE TESTED. THE RETENTION OF 0.5-1.5PERCENT (ON FABRIC WT.) OF DYES WAS ATTAINED WHEN DYEING WAS CONDUCTED AT 85-90DEGREES, PH 5, IN THE PRESENCE OF 15-20PERCENT (NH SUB4) SUB2 SO SUB4 DURING 80 MIN.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--EFFECTS OF FIBER COMPOSITION, STRUCTURE, AND FINISH ON CAPILLARY
PROPERTIES OF OVERCOATINGS -U-
AUTHOR--(03)-GALYK, I.S., SEMAK, B.D., KHARKHAROV, A.A.

COUNTRY OF INFO--USSR

SOURCE--PRZEGŁ. WŁOK. 1970, 24(2), 92-8

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CLOTHING, POLYESTER RESIN, FABRIC, NATURAL FIBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3007/0750

STEP NO--P0/0134/70/024/002/0092/0098

CIRC ACCESSION NO--AP0136187

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136187

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CAPILLARITY WAS DETD. OF
100PERCENT POLYESTER FABRICS AND FABRICS OF VARIOUS BLENDS OF POLYESTERS
AND COTTON. ALL FABRICS WERE BLEACHED, DYED, AND THERMALLY STABILIZED
UNDER THE SAME CONDITIONS. THE MAX. CAPILLARITY, I.E. THE MAX. HEIGHT
OF WATER RISE IN THE FABRICS WAS OBTAINED WITH 67:33 POLYESTER-COTTON
BLENDS. THIS BLEND ALSO HAD THE FASTEST WATER ABSORPTION RATE. THE
SLOWEST ABSORPTION RATE AND LOWEST CAPILLARY WERE OBTAINED WITH
100PERCENT POLYESTER FABRICS. FABRICS WITH CLOSE WEAVE STRUCTURE
ABSORBED LESS WATER. FACILITY: INST. EKON.-HANDLOWY, LVOV,
USSR.

UNCLASSIFIED

1/2 C19
TITLE--BULKY YARN -U-

UNCLASSIFIED

PROCESSING DATE--20NOV70

AUTHOR--(04)-KHARKHAROV, A.A., ROSKIN, YE.S., MAKAROVSKAYA, N.I.,
GLAZOMITSKIY, K.L.
COUNTRY OF INFO--USSR

K

SOURCE--USSR 265,365
REFERENCE--OTKRYTIYA, IZOBRET., PROM OBRATSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--09MAR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--SYNTHETIC FIBER, ACRYLONITRILE, ACRYLAMIDE, POLYMER
CROSSLINKING, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1421

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128820

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AA0126820

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BULKY YARN IS PREPD. FROM A MIXT. OF FIBERS WITH DIFFERENT DEGREES OF SHRINKAGE. ONE OF THE COMPONENT MIXTS. IS FIBER FROM ACRYLONITRILE AND METHYLOLMETHACRYLAMIDE. THE FIBERS ARE CROSSLINKED BY HEATING AT 140DEGREES OR BY TREATING WITH HCL AT 80-90DEGREES. FACILITY: KIROV, S. M. INSTITUTE OF TEXTILE AND LIGHT INDUSTRY, LENINGRAD.

UNCLASSIFIED

USSR

UDC: 539.4:629.12

KOZLYAKOV, V. V., KHARKHURIM, I. Ya., SHISHENIN, Ye. A.

"Investigation of Combined Flexure of a Ship and a Floating Dock by the Method of Finite Elements"

Tr. Leningr. korablestroit. in-ta (Works of the Leningrad Shipbuilding Institute), 1971, vyp. 75, pp 77-85 (from RZh-Mekhanika, No 9, Sep 72, Abstract No 9V667)

Translation: A "dock-ship" system is represented in the form of two girders of stepped variable cross section connected by keel-block spacers. The lower girder is lying on an elastic base; therefore differentiation is taken care of automatically during the computational process. The length of the keel track can be broken up into no more than 20-40 sections. Each spacer may represent several keel-blocks. Loading is reduced to nodal form. The calculation is done by the method of displacements. Two linear and one angular displacement of the end of the rod are taken as the principal unknowns. A matrix of rigidity is found for a rod lying on an elastic base. The initial data for digital computer calculation include information on the construction design scheme, the external load and the parameters of the

1/2

USSR

KOZLYAKOV, V. V. et al., Tr. Leningr. korablestroit. in-ta, 1971, vyp. 75, pp 77-85

terminal elements (rods). The computer gives the displacements and forces for each element. The results of some calculations are given. The described computational scheme is recommended for practical application of sector-wide standard ON-964-69. Bibliography of 9 titles. I. I. Tryenin.

2/2

- 98 -

USSR

UDC 517.946

BOROK, V. M., Khar'kov

"Classes of Uniqueness of Solution of Boundary-Value Problem in an Infinite Layer for Systems of Linear Partial Differential Equations With Constant Coefficients"

Moscow, Matematicheskiiy Sbornik, Novaya Seriya, Vol 79 (121), No 2(6), pp 293-304

Abstract; The article considers the system of equations

$$Lu \equiv \frac{\partial u(x, t)}{\partial t} - P\left(\frac{\partial}{\partial x}\right)u(x, t) = 0, \quad u = \{u_1, \dots, u_n\}, \quad (1)$$

 $x \in \mathbb{R}^m, 0 \leq t \leq T, P \frac{\partial}{\partial x}$ is a matrix whose elements are polynomials of $\frac{\partial}{\partial x_1}, \dots, \frac{\partial}{\partial x_m}$ with complex coefficients. A solution is sought to equation (1) under boundary conditions

$$\begin{aligned} u_{k_i}(x, 0) &= 0 \quad (1 \leq k_i \leq n; i = 1, \dots, r; 1 \leq r \leq n-1), \\ u_{m_j}(x, T) &= 0 \quad (1 \leq m_j \leq n, j = 1, \dots, n-r). \end{aligned} \quad (2)$$

The following question is considered: What assumptions about the increase of function $U(x, t)$, given $|x| = \left[\sum |x_i|^2\right]^{1/2} \rightarrow \infty$,

guarantee that only the function $u(x, t) \equiv 0$ can be the solution of the problem (1) - (2)? A similar question for a second-order equation (with respect to $\frac{\partial}{\partial t}$)

1/2

USSR

BOROK, V. M., Matematicheskiy Sbornik, Novaya Seriya, Vol 79 (121), No 2(6),
pp 293-304

for the scalar function $u(x,t)$ was solved by the author in an earlier article.
The determinant $\Delta(s)$ plays an important role in determining the classes of
uniqueness of the solution to the problem (1)-(2).

2/2

1/2 030 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--GRAVITATIONAL COLLAPSE OF A SLIGHTLY ASPHERICAL MASS -U-

AUTHOR--(02)-PATASHINSKIY, A.Z., KHARKOV, A.A.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIYA NAUK SSSR, DOKLADY, VOL. 190, FEB. 11, 1970, P.

1074-1077
DATE PUBLISHED----FEB70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATHEMATICAL SCIENCES

TOPIC TAGS--GRAVITATION FIELD, AXISYMMETRIC BODY, EARTH GRAVITY, LINEAR
APPROXIMATION, COORDINATE SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/0893

STEP NO--UR/0020/70/190/000/1074/1077

CIRC ACCESSION NO--AT0112057
UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0112057

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DETAILED STUDY OF THE GRAVITATIONAL COLLAPSE OF A SLIGHTLY ASPHERICAL BODY WITH CHARACTERISTICS POSSESSING AXIAL SYMMETRY. SINCE THE DEVIATION FROM SPHERICAL SYMMETRY IS ASSUMED TO BE SMALL, THE EQUATION FOR THE ADDITIONS TO THE METRIC IN EMPTY SPACE IS TAKEN IN A LINEAR APPROXIMATION. THIS MAKES IT POSSIBLE TO DETERMINE IMMEDIATELY THE ANGULAR DEPENDENCE OF THE ADDITIONS, SINCE THE ZERO APPROXIMATION METRIC ALLOWS A GROUP OF THREE DIMENSIONAL ROTATIONS. THE APPROACH USED IS TO CONSIDER FIRST A PERTURBATION OF THE SCHWARZSCHILD METRIC. THEN THE EQUATION OBTAINED IS TRANSFORMED WITH THE AID OF A LEMAITRE TRANSFORM FOR THE ZERO APPROXIMATION. THE REFERENCE FRAME THUS OBTAINED IS NOT COMOVING WITH RESPECT TO THE TEST PARTICLE, BUT DIFFERS ONLY SLIGHTLY FROM A COMOVING FRAME. FACILITY: NOVOSIBIRSKII GOSUDARSTVENNYI UNIVERSITET, NOVOSIBIRSK, USSR.

UNCLASSIFIED

Nuclear Science and Technology

UDC 620.197.5.539.17

USSR

SKAKUN, N. A., KLYUCHAREV, A. P., KHAR'KOV, O. N., ZELESKIY, V. F., and KULAKOV, V. S.

"Using the Nuclear Reaction $O^{18}(p, \alpha)N^{15}$ to Study Oxidation of Metals"

Moscow, Atomnaya Energiya, Vol 30, No 5, May 71, pp 456-458

Abstract: In recent times data on nuclear reactions have been employed to study the processes taking place in the surface layers during oxidation of metals and alloys. Registering the reaction products of the material irradiated by charged particles makes it possible to determine the amount of the test element without ruining the sample and at the same time localizing it by depth. One of the methods suggested in this article involves registering and analyzing the energy spectrum of alpha-particles from the reaction $O^{18}(p, \alpha)N^{15}$ by bombarding a sample containing the isotope O^{18} with a beam of monoenergetic protons.

The excitation function of the reaction $O^{18}(p, \alpha)N^{15}$ was measured experimentally in the range of proton energies of 500-730 keV. Using the procedures discussed in the article, the authors find the distribution profile of oxygen in oxidized samples of zirconium. They also examine the possibility of making similar investigations using the narrow resonance of the reaction

USSR

SKAKUN, N. A., et al., *Atomnaya Energiya*, Vol 30, No 5, May 71, pp 456-458

$^{18}\text{O}(\text{p}, \alpha)\text{N}^{15}$ when $E_p = 629$ keV. They also mention the possibility of using this resonance to study the thick surface layers of metals. All the investigations are supported by illustrations in the form of graphs.

The methods employed made it possible to investigate the interaction of oxygen with various solids, especially with the majority of metals and alloys used in the design of reactors.

This article contains 4 figures, 2 equations, and a bibliography of 5 titles.

2/2

- 46 -

1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--AROMATIC POLYIMIDES WITH PHENYL AND CYCLOHEXYL SIDE GROUPS -U-
AUTHOR--(04)-KHARKOV, S.N., LAVROVA, Z.N., CHEGOLYA, A.S., KRASNOV, YE.P.
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(5), 349-53.
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--POLYIMIDE RESIN, CYCLOHEXANE, HEAT RESISTANT PLASTIC,
POLYCONDENSATION, PYROMELLITIC ACID
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3007/0957 STEP NO--UR/0460/70/012/005/0349/0353
CIRC ACCESSION NO--AP0136387
UNCLASSIFIED

SUBJECT AREAS--CHEMISTRY, 441, 740

TOPIC TAGS--THERMAL DEGRADATION, POLYMERIZATION, PYROMELLITIC ACID,
ACTIVATION ENERGY, MOLECULAR STRUCTURE, CHEMICAL COMPOSITION

2/2 020

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0135537

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AROMATIC HEAT RESISTANT POLYIMIDES
WERE PREPD. IN 74-90PERCENT YIELDS BY LOW TEMP. POLYCONDENSATION OF
1,1-BIS(4,AMINOPHENYL)CYCLOHEXANE, 4,4 PRIME DIAMINODIPHENYLMETHANE,
PYROMELLITIC ANHYDRIDE, AND 3,3 PRIME, R,R PRIME TETRACARBONYLDIPHENYL
OXIDE DIANHYDRIDE IN ACNHE SUBZ, FOLLOWED BY CYCLODEHYDRATION OF THE
RESULTING POLYAMIC ACIDS AT 200-300DEGREES, OR BY HIGH TEMP.
POLYCONDENSATION OF THE SAME MONOMERS IN PHAQ SUBZ.

1/2 017
TITLE--DYEING OF MIXTURES OF CELLULOSE POLYAMIDE FIBERS BY DIRECT
LIGHTFAST DYES -U-
AUTHOR--DEMIDOVA, E.N., YERSHOV, A.P., KHARKHAROV, A.A.
COUNTRY OF INFO--USSR
SOURCE--TEKST. PROM. (MOSCOW) 1970, 30(1) 86
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--DYE, CAPRONE, CELLULOSE RESIN, POLYAMIDE RESIN, SYNTHETIC
FIBER, NATURAL FIBER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1982/1067
STEP NO--UR/0342/70/030/001/0086/0086
AP0052433 UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--11SEP70

2/2 017

CIRC ACCESSION NO--AP0052433

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A DYEING PROCEDURE IS RECOMMENDED FOR KAPRON COTTON BLENDS WITH DIRECT DYES. DIRECT YELLOW 2K, DIRECT RED S, AND DIRECT BLUE WERE TESTED. THE RETENTION OF 0.5-1.5PERCENT (ON FABRIC WT.) OF DYES WAS ATTAINED WHEN DYEING WAS CONDUCTED AT 85-90DEGREES, PH 5, IN THE PRESENCE OF 15-20PERCENT (NH SUB4) SUB2 SO SUB4 DURING 80 MIN.

UNCLASSIFIED

1/2 012
TITLE--EFFECTS OF FIBER COMPOSITION, STRUCTURE, AND FINISH ON CAPILLARY
PROPERTIES OF OVERCOATINGS -U-
AUTHOR--(03)-GALYK, I.S., SEMAK, B.D., KHARKHAROV, A.A.

UNCLASSIFIED

PROCESSING DATE--0400

COUNTRY OF INFO--USSR

SOURCE--PRZEGŁ. WŁOK. 1970, 24(2), 92-8

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CLOTHING, POLYESTER RESIN, FABRIC, NATURAL FIBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3007/0750

STEP NO--PD/0134/70/D24/002/0092/0098

012
CIRC ACCESSION NO--AP0136187 UNCLASSIFIED
ABSTRACT/EXTRACT--(U) CP-0- ABSTRACT. THE CAPILLARITY WAS DETD. OF
100PERCENT POLYESTER FABRICS AND FABRICS OF VARIOUS BLENDS OF POLYESTERS
AND COTTON. ALL FABRICS WERE BLEACHED, DYED, AND THERMALLY STABILIZED
UNDER THE SAME CONDITIONS. THE MAX. CAPILLARITY, I.E. THE MAX. HEIGHT
OF WATER RISE IN THE FABRICS WAS OBTAINED WITH 67:33 POLYESTER-COTTON
BLENDS. THIS BLEND ALSO HAD THE FASTEST WATER ABSORPTION RATE. THE
SLOWEST ABSORPTION RATE AND LOWEST CAPILLARY WERE OBTAINED WITH
100PERCENT POLYESTER FABRICS. FABRICS WITH CLOSE WEAVE STRUCTURE
ABSORBED LESS WATER. FACILITY: INST. EKON.-HANDLOWY, LVOV,
USSR.

PROCESSING DATE--04DEC70

UNCLASSIFIED

1/2 C19
TITLE--BULKY YARN -U-

UNCLASSIFIED

PROCESSING DATE--20NOV70

AUTHOR--(04)--KHARKHAROV, A.A., ROSKIN, YE.S., MAKAROVSKAYA, N.I.,
GLAZOMITSKIY, K.L.
COUNTRY OF INFO--USSR

SOURCE--USSR 265,365
REFERENCE--OTKRYTIYA, IZOBRET., PROM OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--09MAR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--SYNTHETIC FIBER, ACRYLONITRILE, ACRYLAMIDE, POLYMER
CROSSLINKING, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/1421

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128820

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AA0126820

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BULKY YARN IS PREPD. FROM A MIXT. OF FIBERS WITH DIFFERENT DEGREES OF SHRINKAGE. ONE OF THE COMPONENT MIXTS. IS FIBER FROM ACRYLONITRILE AND METHYLOLMETHACRYLAMIDE. THE FIBERS ARE CROSSLINKED BY HEATING AT 140DEGREES OR BY TREATING WITH HCL AT 80-90DEGREES. FACILITY: KIROV, S. M. INSTITUTE OF TEXTILE AND LIGHT INDUSTRY, LENINGRAD.

UNCLASSIFIED

UDC: 539.4:629.12

USSR

KOZLYAKOV, V. V., KHARKHURIM, I. Ya., SHISHENIN, Ye. A.

"Investigation of Combined Flexure of a Ship and a Floating Dock by the Method of Finite Elements"

Tr. Leningr. korablestroito. in-ta (Works of the Leningrad Shipbuilding Institute), 1971, vyp. 75, pp 77-85 (from RZh-Mekhanika, No 9, Sep 72, Abstract No 9V667)

Translation: A "dock-ship" system is represented in the form of two girders of stepped variable cross section connected by keel-block spacers. The lower girder is lying on an elastic base; therefore differentiation is taken care of automatically during the computational process. The length of the keel track can be broken up into no more than 20-40 sections. Each spacer may represent several keel-blocks. Loading is reduced to nodal form. The calculation is done by the method of displacements. Two linear and one angular displacement of the end of the rod are taken as the principal unknowns. A matrix of rigidity is found for a rod lying on an elastic base. The initial data for digital computer calculation include information on the construction design scheme, the external load and the parameters of the

1/2

USSR

KOZLYAKOV, V. V. et al., Tr. Leningr. korablestroit. in-ta, 1971, vyp. 75, pp 77-85

terminal elements (rods). The computer gives the displacements and forces for each element. The results of some calculations are given. The described computational scheme is recommended for practical application of sector-wide standard ON-964-69. Bibliography of 9 titles. I. I. Tryanin.

USSR

UDC 517.946

BOROK, V. M., Khar'kov

"Classes of Uniqueness of Solution of Boundary-Value Problem in an Infinite Layer for Systems of Linear Partial Differential Equations With Constant Coefficients"

Moscow, Matematicheskiiy Sbornik, Novaya Seriya, Vol 79 (121), No 2(6), pp 293-304

Abstract; The article considers the system of equations

$$Lu \equiv \frac{\partial u(x, t)}{\partial t} - P \left(\frac{\partial}{\partial x} \right) u(x, t) = 0, \quad u = \{u_1, \dots, u_n\}, \quad (1)$$

$x \in R^m$, $0 \leq t \leq T$, $P \frac{\partial}{\partial x}$ is a matrix whose elements are polynomials of $\frac{\partial}{\partial x_1}, \dots, \frac{\partial}{\partial x_m}$ with complex coefficients. A solution is sought to equation (1) under boundary conditions

$$u_{k_i}(x, 0) = 0 \quad (1 \leq k_i \leq n; i = 1, \dots, r; 1 \leq r \leq n-1), \quad (2)$$

$$u_{m_j}(x, T) = 0 \quad (1 \leq m_j \leq n, j = 1, \dots, n-r).$$

The following question is considered: What assumptions about the increase of function $U(x, t)$, given $|x| = \left[\sum |x_i|^2 \right]^{1/2} \rightarrow \infty$,

guarantee that only the function $u(x, t) \equiv 0$ can be the solution of the problem (1) - (2)? A similar question for a second-order equation (with respect to $\frac{\partial}{\partial t}$)

1/2

USSR

BOROK, V. M., Matematicheskiy Sbornik, Novaya Seriya, Vol 79 (121), No 2(6),
pp 293-304

for the scalar function $u(x,t)$ was solved by the author in an earlier article.
The determinant $\Delta(s)$ plays an important role in determining the classes of
uniqueness of the solution to the problem (1)-(2).

2/2

1/2 030 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--GRAVITATIONAL COLLAPSE OF A SLIGHTLY ASPHERICAL MASS -U-
AUTHOR--(02)-PATASHINSKIY, A.Z., KHARKOV, A.A. *K*
COUNTRY OF INFO--USSR
SOURCE--AKADEMIIA NAUK SSSR, DOKLADY, VOL. 190, FEB. 11, 1970, P.
1074-1077
DATE PUBLISHED----FEB70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATHEMATICAL SCIENCES
TOPIC TAGS--GRAVITATION FIELD, AXISYMMETRIC BODY, EARTH GRAVITY, LINEAR
APPROXIMATION, COORDINATE SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1992/0893

STEP NO--UR/0020/70/190/000/1074/1077

CIRC ACCESSION NO--AT0112057

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0112057

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DETAILED STUDY OF THE GRAVITATIONAL COLLAPSE OF A SLIGHTLY ASPHERICAL BODY WITH CHARACTERISTICS POSSESSING AXIAL SYMMETRY. SINCE THE DEVIATION FROM SPHERICAL SYMMETRY IS ASSUMED TO BE SMALL, THE EQUATION FOR THE ADDITIONS TO THE METRIC IN EMPTY SPACE IS TAKEN IN A LINEAR APPROXIMATION. THIS MAKES IT POSSIBLE TO DETERMINE IMMEDIATELY THE ANGULAR DEPENDENCE OF THE ADDITIONS, SINCE THE ZERO APPROXIMATION METRIC ALLOWS A GROUP OF THREE DIMENSIONAL ROTATIONS. THE APPROACH USED IS TO CONSIDER FIRST A PERTURBATION OF THE SCHWARZSCHILD METRIC. THEN THE EQUATION OBTAINED IS TRANSFORMED WITH THE AID OF A LEMAITRE TRANSFORM FOR THE ZERO APPROXIMATION. THE REFERENCE FRAME THUS OBTAINED IS NOT COMOVING WITH RESPECT TO THE TEST PARTICLE, BUT DIFFERS ONLY SLIGHTLY FROM A COMOVING FRAME. FACILITY: NOVOSIBIRSKII SOSUDARSTVENNYI UNIVERSITET, NOVOSIBIRSK, USSR.

UNCLASSIFIED

Nuclear Science and Technology

USSR

UDC 620.197.5.539.17

SKAKUN, N. A., KLYUCHAREV, A. P., KHAR'KOV, O. N., ZELENSKIY, V. F., and
KULAKOV, V. S.

"Using the Nuclear Reaction $O^{18}(p, \alpha)N^{15}$ to Study Oxidation of Metals"

Moscow, Atomnaya Energiya, Vol 30, No 5, May 71, pp 456-458

Abstract: In recent times data on nuclear reactions have been employed to study the processes taking place in the surface layers during oxidation of metals and alloys. Registering the reaction products of the material irradiated by charged particles makes it possible to determine the amount of the test element without ruining the sample and at the same time localizing it by depth. One of the methods suggested in this article involves registering and analyzing the energy spectrum of alpha-particles from the reaction $O^{18}(p, \alpha)N^{15}$ by bombarding a sample containing the isotope O^{18} with a beam of monoenergetic protons.

The excitation function of the reaction $O^{18}(p, \alpha)N^{15}$ was measured experimentally in the range of proton energies of 500-730 keV. Using the procedures discussed in the article, the authors find the distribution profile of oxygen in oxidized samples of zirconium. They also examine the possibility of making similar investigations using the narrow resonance of the reaction

1/2

USSR

SKAKUN, N. A., et al., Atomnaya Energiya, Vol 30, No 5, May 71, pp 456-458

^{18}O (p, α) ^{15}N when $E_p = 629$ keV. They also mention the possibility of using this resonance to study the thick surface layers of metals. All the investigations are supported by illustrations in the form of graphs.

The methods employed made it possible to investigate the interaction of oxygen with various solids, especially with the majority of metals and alloys used in the design of reactors.

This article contains 4 figures, 2 equations, and a bibliography of 5 titles.

2/2

- 46 -

1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--AROMATIC POLYIMIDES WITH PHENYL AND CYCLOHEXYL SIDE GROUPS -U-
AUTHOR--(04)--KHARKOV, S.N., LAVROVA, Z.N., CHEGOLYA, A.S., KRASNOV, YE.P.
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(5), 349-53.
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--POLYIMIDE RESIN, CYCLOHEXANE, HEAT RESISTANT PLASTIC,
POLYCONDENSATION, PYROMELLITIC ACID

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3007/0957 STEP NO--UR/0460/70/012/005/0349/0353
CIRC ACCESSION NO--AP0136387
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136387
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. AROMATIC HEAT RESISTANT POLYIMIDES
WERE PREPD. IN 74-90PERCENT YIELDS BY LOW TEMP. POLYCONDENSATION OF
1,1,BIS(4,AMINOPHENYL)CYCLOHEXANE, 4,4 PRIME DIAMINOTRIPHENYLMETHANE,
PYROMELLITIC ANHYDRIDE, AND 3,3 PRIME, R,R PRIME TETRACARBOXYDIPHENYL
OXIDE DIANHYDRIDE IN ACNME SUB2, FOLLOWED BY CYCLODEHYDRATION OF THE
RESULTING POLYAMIC ACIDS AT 200-300DEGREES, OR BY HIGH TEMP.
POLYCONDENSATION OF THE SAME MONOMERS IN PHNO SUB2.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--MECHANISM OF THERMAL DEGRADATION OF AROMATIC POLYIMIDES OF
DIFFERENT CHEMICAL STRUCTURES -U-
AUTHOR--(04)--KRASHOV, YE.P., AKSENOVA, V.P., KHARKOV, S.N., BARANOVA, S.A.
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(4), 873-84
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--THERMAL DEGRADATION, POLYIMIDE RESIN, PYROMELLITIC ACID,
ACTIVATION ENERGY, MOLECULAR STRUCTURE, CHEMICAL COMPOSITION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/1684 STEP NO--UR/0459/70/012/004/0873/0884
CIRC ACCESSION NO--AP0125305
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0125305

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT.

THE THERMAL DEGRADATION OF (P,C

SUB6 H SUB4 C SUB6 H SUB4 R,P) SUBN, (P,C SUB6 H SUB4 XC SUB6 H SUB4
R,P) SUBN (R IS PYROMELLITDIIMIDO AND X IS O, SO SUB2, CH SUB2, CHPH, OR
1,1-CYCLOHEXYLIDENE), I, OR II (X IS AS ABOVE) GAVE VARIOUS AMTS. OF CO
SUB2, CO, H SUB2 O, C SUB6 H SUB6, PHME, HCN, H, AND PHCN. THE
ACTIVATION ENERGIES OF DEGRADATION WERE DETD. THE STABILITY OF THE
POLYMERS DEPENDED BOTH ON THE NATURE OF X AND THE STRUCTURE OF THE LARGE
AROMATIC FRAGMENTS. FACILITY: VSES. NAUCH.-ISSLED. INST. SIN.
VOLOKON, KALININ, USSR.

UNCLASSIFIED

USSR

UDC 615.371:576.851.42].015.4:612.015.6:577.164.2

KRATINOV, A. G., POLYAKOVA, A. M., and KHAR'KOVA, N. M., Scientific Research
Antiplague Institute of the Caucasus and Transcaucasus

"The Effect of Live Brucellosis Vaccine on Ascorbic Acid Levels in Animal
Organs"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1971,
pp 146-147

Abstract: The distribution of ascorbic acid was studied in mice, rats, and guinea pigs after a single subcutaneous injection of live brucellosis vaccine from strains 19-BA and 104-M. The vaccine caused considerable shifts in the animals' ascorbic acid metabolism. The ascorbic acid level dropped, for example, in the adrenals and myocardium of mice and rats while rising in the skeletal muscles. In the guinea pigs, vaccination decreased the ascorbic acid concentration of the adrenals, spleen, and lungs while increasing it in the thymus and myocardium. These shifts are regarded as a protective-adaptive response to antigenic stimulation and should be compensated in vaccinated humans with supplemental doses of vitamin C.

1/1

USSR

UDC 612.352.1+612.352.17/.18].014-46:515.372:576.851.45.097.29

KRATINOV, A. G. and KHAR'KOVA, N. N., Scientific Research Antiplague Institute of the Caucasus and Transcaucasus, Stavropol

"Changes in the Glycogen Content of the Liver, Myocardium, and Skeletal Muscles of Rodents During Plague Intoxication"

Moscow, Voprosy Meditsinskoy Khimii, No 4, 1971, pp 373-378

Abstract: Comparative study was conducted of some aspects of carbohydrate metabolism in three rodent species given sublethal doses of autolysate or fraction 2 of *Pasteurella pestis* EV. Three hours of intoxication decreased the glycogen content of the liver and gastrocnemius of all the animals, more so in white rats (highly sensitive to plague toxin) than in gerbils (more resistant) and guinea pigs (particularly resistant). Intoxication also decreased the glycogen content of the myocardium in gerbils and guinea pigs, but increased it in rats. During toxicosis the blood sugar level rose significantly in rats but remained unchanged in gerbils and guinea pigs. In all animals the concentration of ascorbic acid decreased significantly in the adrenals and liver.

1/1

UDC 678.06:661.183.123.3.01:53

USSR

TEVLINA, A. S., AKHNAZAROVA, S. L., KHAR'KOVA, T. P., ZHUKOVA, T. B., and KORSHAK, V. V.

"Homogeneous Anionic Membranes and Their Properties"

Moscow, Plasticheskiye Massy, No 2, 1973, pp 15-17

Abstract: A method for production of homogeneous anionic membranes is reported based on nitration of grafted copolymers [styrene + divinylbenzene + copolymer of vinylidene fluoride and hexafluoropropylene] with a mixture of nitric and sulfuric acids followed by reduction and alkylation. The results of the effect of various transformations on the electrochemical and physical-mechanical properties of the membranes are reported. These results were obtained by regression and correlational analyses. It was established that homogeneous membranes show a high chemical and thermal stability and retain their properties even in very aggressive media such as sulfuric, hydrochloric or nitric acids.

1/1

USSR UDC 543.422.4:542.957:547.357.4:546.821'131:547.558.1:547.315.1

BONDARENKO, G. N., KHAR'KOVA, Ye. M., MUSHINA, Ye. A., TETERINA, M. P., and KRENTSEL', B. A., Institute of Petrochemical Synthesis Imeni A. V. Topchiyev, Academy of Sciences USSR

"IR Spectra of the Reaction Products of Bis- π -allylnickel Bromide With Titanium Tetrachloride, Triphenylphosphine, and Allene"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 73, pp 1224-1227

Abstract: The IR spectra were studied of the reaction products of bis- π -allylnickel bromide with $TiCl_4$ and triphenylphosphine. It was proposed that there occurs a $\pi \rightarrow \sigma$ isomerization in π -allyl-nickel complex. The π -allyl structure is retained in the reaction of bis- π -allylnickel bromide with allene. During allene polymerization the activity of the complexes decreases in the order $(\pi-C_3H_5NiI)_2 > (\pi-C_3H_5NiBr)_2 > (\pi-C_4H_7Cl)_2$.

1/1

Thin Films

UDC 543.70

USSR

GANOPOL'SKIY, V. I., SHARAPOVA, V. S., KHARKOVER, M. Z., and SHLEG, M. U.,
Institute of Solid State Physics and Semiconductors, Academy of Sciences
Belorussian SSR, and Ural State University imeni A. M. Gor'ky, Sverdlovsk,
Ministry of Higher and Secondary Specialized Education RSFSR

"Extraction Photometric Analysis of Thin Magnetic Films Fe-Co-Ni by Means of
8-Mercaptoquinoline"

Moscow, Zhurnal Analiticheskoy Khimii, Vol 25, No 5, May 70, pp 982-986

Abstract: A method of analysis of thin ferromagnetic films Fe-Co-Ni is described. The method is based on the following: 1) the thiooxinate stability increases in the series Fe-Ni-Co, the difference in this stability being especially marked between iron and nickel on one hand, and cobalt on the other; 2) the absorption spectra of the above thiooxinates have wide, intensive bands in the visual region suitable for analytical purposes. The absorption bands of iron thiooxinate ($\lambda_{\max} = 450 \text{ m}\mu$) and cobalt thiooxinate ($\lambda_{\max} = 470 \text{ m}\mu$) are practically superimposable, while each of them individually, when paired with the absorption band of nickel thiooxinate ($\lambda_{\max} = 540 \text{ m}\mu$) can be resolved spectrophotometrically. These

USSR

GANOPOL'SKIY, V. I., et al, Zhurnal Analiticheskoy Khimii, Vol 25, No 5, May 70, pp 982-986

properties permit the analysis of two-component mixtures of thiooxinates (Fe-Ni and Co-Ni) to be carried out without separating the components. It also simplifies analysis of the Fe-Co-Ni system; the prolonged method of sequential reextracting of iron and nickel is avoided by separating Fe-Ni mixture from Co, which is left behind.

2/2

029
UNCLASSIFIED
TITLE--ANALYSIS OF FERROMAGNETIC MATERIALS. USE OF 8 MERCAPTOQUINOLINE
FOR THE EXTRACTION AND PHOTOMETRIC ANALYSIS OF AN IRON, COBALT, NICKEL
AUTHOR--(05)-GANPOLSKIY, V.I., KHARKOV, M.Z., BARKOVSKIY, V.F.,
SHARAPOVA, V.S., KOSTYUKULGAVCHUK, L.P.
COUNTRY OF INFO--USSR
SOURCE--VESTSI AKAD. NAVUK BELARUS. SSR, SER. KHIM. NAVUK 1970, (1), 58-63
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY, MATERIALS, PHYSICS
TOPIC TAGS--MERCAPTAN, QUINOLINE, PHOTOMETRIC ANALYSIS, IRON, COBALT,
NICKEL, FERROMAGNETIC FILM, SOLVENT EXTRACTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/2105
CIRC ACCESSION NO--AP0125689
STEP NO--UR/0419/70/000/001/0058/0063
UNCLASSIFIED

2/2 029

CIRC ACCESSION NO--AP0125689
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT. THE USE OF 8 MERCAPTOQUINOLINE (I) IN THE EXTN. AND PHOTOMETRIC ANAL. OF 2, AND 3, COMPONENT FERROMAGNETIC FILMS (FE, CO, NI, FE, NI, FE, CO, AND CO, NI) WAS STUDIED BY USING SYNTHETIC SAMPLES. I CAN BE USED SUCCESSFULLY IN THE ANAL. OF FERROMAGNETIC MATERIALS. THE SAMPLE OF THE FERROMAGNETIC MATERIAL IS DISSOLVED IN H SUB2 SO SUB4 OR HCL, TREATED WITH AQ. SOLN. OF 1, NH SUB4 OH, AND CHCL SUB3. THE CHCL SUB3 EXT. IS TREATED WITH AQ. 6-BIN H SUB2 SO SUB4 TO REMOVE FE, THEN WITH AQ. HCL TO REMOVE NI. THE AQ. SOLNS. ARE REEXTD. WITH CHCL SUB3. THE ABSORBANCES OF THE CHCL SUB3 EXTs. OF FE, CO, AND NI 8 MERCAPTOQUINOLINATES ARE MEASURED AT 450, 470, AND 540 NM, RESP. FACILITY: INST. FIZ. TVERD. TELA POLUPROV., MINSK, USSR.

UNCLASSIFIED

Acc. Nr:

AP0048918

Abstracting Service:
CHEMICAL ABST. 5-70

Ref. Code:

4A 0035

K

164571q Solubility products of 8-mercaptoquinolines of certain metals. ~~Charkover M. Z.; Barkovskii V. E.; Vdovina V. M.; Gurova L. P. Leningrad State Univ., Sverdlovsk, USSR.~~
Zh. Anal. Khim. 1970, 25(1), 30-3 (Russ). Soly. products of Co, Pb, Zn, V, Bi, and Mn 8-mercaptoquinolines were detd. by an extn.-photometric method. Their neg. logs are 29.60, 26.02, 29.44, 25.10, 46.81, and 15.91, resp. Soly. products of Fe, Mn, Ni, and Bi thiooxinates in CHCl₃ were detd. The following soly. scale was composed: Mn > V > Pb > Ni ~ Fe > Co ~ Zn > Bi. Conditions for sepg. those elements with thiooxine were calcd.
Chaim Weiner

1/1

REEL/FRA
19800630

7nt

USSR

UDC 628.31:669.018.2

NADEYENKO, V. G., KHARKOVER, S. V., and PETROVA, N. N., Sverdlovsk Institute of Labor Hygiene and Occupational Diseases

"The Effect of Effluents From a Hard Alloy Plant on the Groundwater"

Moscow, Gigiyena i Sanitariya, No 4, 1970, pp 106-107

Abstract: The discharge of untreated effluents from an unspecified hard alloy plant into a lake resulted in pollution of the groundwater in the vicinity, both through direct percolation of water from the lake, and through the washing out by rain of salts from the soils adjacent to the lake. Analysis of well water at several points located 3-7 km from the lake revealed the presence of tungsten in all the water-supply sources. Concentrations were highest in the wells of inhabited localities closest to the lake. The amount of the element in many wells was somewhat greater during the flood season than in the low-water period. The tungsten content was 2-5 times above the permissible concentration in well water (0.1 mg/liter). Tungsten was also present in concentrations of 0.02-0.06 mg/liter in bodies of open water free from industrial effluents.

1/1

- 38 -

"APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R002201310008-4

APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R002201310008-4"

UNCLASSIFIED

PROCESSING DATE--18NDY70

1/2 023

TITLE--MECHANISM OF THERMAL DEGRADATION OF AROMATIC POLYIMIDES OF
DIFFERENT CHEMICAL STRUCTURES --U--

AUTHOR--(U41-KRASNOV, YE.P.; ANSENOVA, V.P.; KHARKOV, S.H.; DABANOVA, S.A.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN.; SER. A 1970, 12(4), 573-84

DATE OF INFO--70

2/2 023 UNCLASSIFIED PROCESSING DATE--13NOV70
 CIRC ACCESSION NO--AP0125305
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THERMAL DEGRADATION OF (P,C
 SUB6 H SUB4 C SUB6 H SUB4 R,P) SUBN, (P,C SUB6 H SUB4 XC SUB6 H SUB4
 R,P) SUBN (R IS PYROMELLITIMIDO AND X IS O, SO SUB2, CH SUB2, CHPH, OR
 CYC/HEXYMIDENE), I, OR II (X IS AS ABOVE) GAVE VARIOUS AMTS. OF CO
 ACTIVATION ENERGIES OF DEGRADATION WERE DETERM. THE
 POLYMERS DEPENDED BOTH ON THE NATURE OF X AND THE STRUCTURE OF THE LARGE
 AROMATIC FRAGMENTS. FACILITY: VSES. NAUCH.-ISSLED. INST. SIM.
 MOLOKON, KALININ, USSR.

USSR

UDC 615.371:576.851.42].015.4:612.015.6:577.164.2

KRATINOV, A. G., POLYAKOVA, A. M., and KHAR'KOVA, N. M., Scientific Research
Antiplague Institute of the Caucasus and Transcaucasus

"The Effect of Live Brucellosis Vaccine on Ascorbic Acid Levels in Animal
Organs"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1971,
pp 146-147

Abstract: The distribution of ascorbic acid was studied in mice, rats, and guinea pigs after a single subcutaneous injection of live brucellosis vaccine from strains 19-BA and 104-M. The vaccine caused considerable shifts in the animals' ascorbic acid metabolism. The ascorbic acid level dropped, for example, in the adrenals and myocardium of mice and rats while rising in the skeletal muscles. In the guinea pigs, vaccination decreased the ascorbic acid concentration of the adrenals, spleen, and lungs while increasing it in the thymus and myocardium. These shifts are regarded as a protective-adaptive response to antigenic stimulation and should be compensated in vaccinated humans with supplemental doses of vitamin C.

1/1

USSR

UDC 612.352.1+612.352.17/.18].014-46:515.372:576.851.45.097.29

KRATINOV, A. G. and KHAR'KOVA, N. M., Scientific Research Antiplague Institute of the Caucasus and Transcaucasus, Stavropol

"Changes in the Glycogen Content of the Liver, Myocardium, and Skeletal Muscles of Rodents During Plague Intoxication"

Moscow, Voprosy Meditsinskoy Khimii, No 4, 1971, pp 373-378

Abstract: Comparative study was conducted of some aspects of carbohydrate metabolism in three rodent species given sublethal doses of autolysate or fraction 2 of Pasteurella pestis EV. Three hours of intoxication decreased the glycogen content of the liver and gastrocnemius of all the animals, more so in white rats (highly sensitive to plague toxin) than in gerbils (more resistant) and guinea pigs (particularly resistant). Intoxication also decreased the glycogen content of the myocardium in gerbils and guinea pigs, but increased it in rats. During toxicosis the blood sugar level rose significantly in rats but remained unchanged in gerbils and guinea pigs. In all animals the concentration of ascorbic acid decreased significantly in the adrenals and liver.

1/1

USSR

UDC 678.06:661.183.123.3.01:53

TEVLINA, A. S., AKHNAZAROVA, S. L., KHAR'KOVA, T. P., ZHUKOVA, T. B., and KORSHAK, V. V.

"Homogeneous Anionic Membranes and Their Properties"

Moscow, Plasticheskiye Massy, No 2, 1973, pp 15-17

Abstract: A method for production of homogeneous anionic membranes is reported based on nitration of grafted copolymers [styrene + divinylbenzene + copolymer of vinylidene fluoride and hexafluoropropylene] with a mixture of nitric and sulfuric acids followed by reduction and alkylation. The results of the effect of various transformations on the electrochemical and physical-mechanical properties of the membranes are reported. These results were obtained by regression and correlational analyses. It was established that homogeneous membranes show a high chemical and thermal stability and retain their properties even in very aggressive media such as sulfuric, hydrochloric or nitric acids.

1/1

USSR UDC 543.422.4:542.957:547.357.4:546.821'131:547.558.1:547.315.1

BONDARENKO, G. N., KHAR'KOVA, Ye. M., MUSHINA, Ye. A., TETERINA, M. P., and KRENTSEL', B. A., Institute of Petrochemical Synthesis Imeni A. V. Topchiyev, Academy of Sciences USSR

"IR Spectra of the Reaction Products of Bis- π -allylnickel Bromide With Titanium Tetrachloride, Triphenylphosphine, and Allene"

Moscow, Izvestiya Akademii Nauk SSSR. Seriya Khimicheskaya, No 6, Jun 73, pp 1224-1227

Abstract: The IR spectra were studied of the reaction products of bis- π -allylnickel bromide with TiCl_4 and triphenylphosphine. It was proposed that there occurs a $\pi \rightarrow \sigma$ isomerization in π -allyl-nickel complex. The π -allyl structure is retained in the reaction of bis- π -allylnickel bromide with allene. During allene polymerization the activity of the complexes decreases in the order $(\pi\text{-C}_3\text{H}_5\text{NiI})_2 > (\pi\text{-C}_3\text{H}_5\text{NiBr})_2 > (\pi\text{-C}_4\text{H}_7\text{Cl})_2$.

1/1

Thin Films

USSR

UDC 543.70

GANOPOL'SKIY, V. I., SHARAPOVA, V. S., KHARKOVER, M. Z., and SHELEG, M. U.,
Institute of Solid State Physics and Semiconductors, Academy of Sciences
Belorussian SSR, and Ural State University imeni A. M. Gor'ky, Sverdlovsk,
Ministry of Higher and Secondary Specialized Education RSFSR

"Extraction Photometric Analysis of Thin Magnetic Films Fe-Co-Ni by Means of
8-Mercaptoquinoline"

Moscow, Zhurnal Analiticheskoy Khimii, Vol 25, No 5, May 70, pp 982-986

Abstract: A method of analysis of thin ferromagnetic films Fe-Co-Ni is described. The method is based on the following: 1) the thiooxinate stability increases in the series Fe-Ni-Co, the difference in this stability being especially marked between iron and nickel on one hand, and cobalt on the other; 2) the absorption spectra of the above thiooxinates have wide, intensive bands in the visual region suitable for analytical purposes. The absorption bands of iron thiooxinate ($\lambda_{\max} = 450 \text{ m}\mu$) and cobalt thiooxinate ($\lambda_{\max} = 470 \text{ m}\mu$) are practically superimposable, while each of them individually, when paired with the absorption band of nickel thiooxinate ($\lambda_{\max} = 540 \text{ m}\mu$) can be resolved spectrophotometrically. These

1/2

USSR

GANOPOL'SKIY, V. I., et al, Zhurnal Analiticheskoy Khimii, Vol 25, No 5, May 70, pp 982-986

properties permit the analysis of two-component mixtures of thiooxinates (Fe-Ni and Co-Ni) to be carried out without separating the components. It also simplifies analysis of the Fe-Co-Ni system; the prolonged method of sequential reextracting of iron and nickel is avoided by separating Fe-Ni mixture from Co, which is left behind.

2/2

1/2 029 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--ANALYSIS OF FERROMAGNETIC MATERIALS. USE OF 8 MERCAPTOQUINOLINE
FOR THE EXTRACTION AND PHOTOMETRIC ANALYSIS OF AN IRON, COBALT, NICKEL
AUTHOR--(05)--GANOPOLSKIY, V.I., KHARKOVER, M.Z., BARKOVSKIY, V.F.,
SHARAPOVA, V.S., KOSTYUKKULGAVCHUK, L.P.
COUNTRY OF INFO--USSR
SOURCE--VESTSI AKAD. NAVUK BELARUS. SSR, SER. KHIM. NAVUK 1970, (1), 58-63
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS, PHYSICS

TOPIC TAGS--MERCAPTAN, QUINOLINE, PHOTOMETRIC ANALYSIS, IRON, COBALT,
NICKEL, FERROMAGNETIC FILM, SOLVENT EXTRACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2105

STEP NO--UR/0419/70/000/001/0058/0063

CIRC ACCESSION NO--AP0125689

UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0125689

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE USE OF 8 MERCAPTOQUINOLINE (I) IN THE EXTN. AND PHOTOMETRIC ANAL. OF 2, AND 3, COMPONENT FERROMAGNETIC FILMS (FE,CO,NI, FE,NI, FE,CO, AND CO,NI) WAS STUDIED BY USING SYNTHETIC SAMPLES. I CAN BE USED SUCCESSFULLY IN THE ANAL. OF FERROMAGNETIC MATERIALS. THE SAMPLE OF THE FERROMAGNETIC MATERIAL IS DISSOLVED IN H SUB2 SO SUB4 OR HCL, TREATED WITH AQ. SOLN. OF I, NH SUB4 OH, AND CHCL SUB3. THE CHCL SUB3 EXT. IS TREATED WITH AQ. 6-8N H SUB2 SO SUB4 TO REMOVE FE, THEN WITH AQ. HCL TO REMOVE NI. THE AQ. SOLNS. ARE REEXTD. WITH CHCL SUB3. THE ABSORBANCES OF THE CHCL SUB3 EXT. OF FE, CO, AND NI 8 MERCAPTOQUINOLINATES ARE MEASURED AT 450, 470, AND 540 NM, RESP.

FACILITY: INST. FIZ. TVERO. TELA POLUPROV., MINSK, USSR.

UNCLASSIFIED

Acc. Nr: **AP0048918** Abstracting Service:
CHEMICAL ABST. 5-70

Ref. Code:
4A 0075

K

104571q Solubility products of 8-mercaptoquinolines of certain metals. ~~Kharkover, M. Z.; Barkovskii, V. E.; Vdovina V. M.; Gurova, L. P. (Ural State Univ., Sverdlovsk, USSR). Zh. Anal. Khim. 1970, 25(1), 30-3 (Russ). Soly. products of Co, Pb, Zn, V, Bi, and Mn 8-mercaptoquinolines were detd. by an extn.-photometric method. Their neg. logs are 29.60, 26.02, 29.44, 25.10, 46.81, and 15.94, resp. Soly. products of Fe, Mn, Ni, and Bi thiooxinates in CHCl₃ were detd. The following soly. scale was composed: Mn > V > Pb > Ni ~ Fe > Co ~ Zn > Bi. Conditions for sepg. those elements with thio-oxine were calcd.~~
Chaim Weiner

1/

REEL/FRA
19800690

7nt

USSR

UDC 628.31:669.018.2

NADEYENKO, V. G., KHARKOVER, S. V., and PETROVA, N. N., Sverdlovsk Institute of Labor Hygiene and Occupational Diseases

"The Effect of Effluents From a Hard Alloy Plant on the Groundwater"

Moscow, Gigiyena i Sanitariya, No 4, 1970, pp 106-107

Abstract: The discharge of untreated effluents from an unspecified hard alloy plant into a lake resulted in pollution of the groundwater in the vicinity, both through direct percolation of water from the lake, and through the washing out by rain of salts from the soils adjacent to the lake. Analysis of well water at several points located 3-7 km from the lake revealed the presence of tungsten in all the water-supply sources. Concentrations were highest in the wells of inhabited localities closest to the lake. The amount of the element in many wells was somewhat greater during the flood season than in the low-water period. The tungsten content was 2-5 times above the permissible concentration in well water (0.1 mg/liter). Tungsten was also present in concentrations of 0.02-0.06 mg/liter in bodies of open water free from industrial effluents.

1/1

1/2 017 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--HOW THE STEEL WAS REFINED -U-
AUTHOR--KHARKOVSKIY, A. *K*
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, TEKNIKA MOLODEZHI, NO 3, 1970, PP 36-37
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--SYNTHETIC SLAG, METALLURGIC RESEARCH FACILITY, METALLURGIC
PLANT, STEEL MANUFACTURE PROCESS, ELECTROSLAB MELTING, METAL REFINING,
ELECTRIC FURNACE, HONORARY TITLE AWARD, LENIN PRIZE, STEEL TECHNOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1993/1568

STEP NO--UR/0029/70/000/003/0036/0037

CIRC ACCESSION NO--AP0114156

77777777777 UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0114156

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. A METHOD FOR REFINING STEEL BY MEANS OF MOLTEN SYNTHETIC SLAG, DEVELOPED AT THE CENTRAL SCIENTIFIC RESEARCH INSTITUTE OF FERROUS METALLURGY ON EQUIPMENT DEVELOPED AT THE CHELYABINSK METALLURGICAL PLANT, WON FOR ITS DEVELOPERS THE LENIN PRIZE. THE CHARGE COMPONENTS ARE MELTED DOWN IN THE CHARGING MACHINE, AND ARE THEN PIPED INTO A 100 TON ELECTRIC FURNACE WHERE THE SYNTHETIC SLAG HAS ALREADY BEEN LIQUIFIED. BY MEANS OF THIS METHOD IT IS POSSIBLE TO OBTAIN HIGH PURITY STEEL IN LARGE FURNACES.

????????????

UNCLASSIFIED

USSR

UDC 621.385.032.213

KHAR'KOVSKIY, V.B.

"Computation Of Mechanical Stability Of Cathodes Of Loop Design For Transmitting Tubes With Elevated Starting Currents Of Heater"

Vopr. teorii i nadezhnosti elektr. mashin i apparatov. Temat. sb. nauchno-issled. rabot (Problems Of Theory And Reliability Of Electrical Machines And Apparatus. Thematic Collection Of Scientific-Research Work), 1970, Issue 2, pp 90-96 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1A69)

Translation: A computation is considered for the electrodynamic forces acting on the rods of the loop cathode of transmitting tubes. The graphic and analytical dependences presented easily make it possible to determine the resultant force, both with uniform and nonuniform distribution of the rods with respect to the circumference, and to evaluate the mechanical stability of the cathode with elevated starting currents of the heater. 2 ref. Summary.

1/1

1/2 009 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--REFRACTOMETRIC DETERMINATION OF FURFURAL CONTENT IN RAFFINATE AND
EXTRACT SOLUTIONS OF THE SELECTIVE REFINING OF OILS -U-
AUTHOR-(04)-ISMAYLOV, R.G., KHARKOVSKIY, YU.I., MIRZOYEV, S.D.,
MUGANLINSKIY, F.F.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., NEFT GAZ 1970, 13(2), 57-60
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--FURFURAL, PETROLEUM PRODUCT, CHEMICAL ANALYSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1634 STEP NO--UR/0152/70/013/002/0057/0060
CIRC ACCESSION NO--AT0118613
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0118613

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RAFFINATE AND EXT. WERE EXTD. WITH WATER, ADDING SOME PETROLEUM ETHER TO PREVENT FORMATION OF EMULSION. FURFURAL (I) WAS PRESENT IN THE AQ. EXT. SMALLER THAN OR EQUAL TO 2 WT. PERCENT. THE DETD. ERRORS WERE SMALLER THAN OR EQUAL 1PERCENT ABS. THE DEPENDENCE OF THE CONCN. OF I ON THE REFRACTOMETRIC INDICATIONS IS GRAPHICALLY PRESENTED. FACILITY: AZERB. INST. NEFTI KHIM. IM. AZIZBEKOVA, BAKU, USSR.

UNCLASSIFIED

KHAR KHURIM, I. Ya.



DEPARTMENT OF THE NAVY
NAVAL INTELLIGENCE SUPPORT CENTER
TRANSLATION DIVISION
4301 SUTLAND ROAD
WASHINGTON, D.C. 20390

NAVJISC / TAAH-370-73

Copy 10450

CLASSIFICATION: UNCLASSIFIED

APPROVED FOR PUBLIC RELEASE, DISTRIBUTION UNLIMITED

TITLE:

Application of the Method of Finite Elements to the
Calculation of Ship Structures
Ispol'zovaniya metoda konechnykh elementov dlya rascheta
sudovoykh poverkhnosty

AUTHOR(S):

Khoshenov, V. A., Kharkhurin, I. Ya., and Mazari, S. N.

PAGES:

12

SOURCE:

*Sudostroeniye, No. 6, 1971
Pages 11-15*

ORIGINAL LANGUAGE: Russian

TRANSLATOR:

DM

NISC TRANSLATION NO. 1420

APPROVED *DM*

DATE 18 March 1972

USSR

UDC 629.7.036.54-66:536.46

KHARKOVSKAYA, E. M.

"Spectral Investigation of the Combustion of Magnesium Particles in Rarefied Air"

Odessa, 11-ya Vses. Konf. po Vopr. Ispareniya, Goreniya i Gaz. Dinamiki Dispersn. Sred, 1972--Sbornik(11th All-Union Conference on Problems of the Evaporation, Combustion, and Gas Dynamics of Dispersed Media, 1972--Collection of Works), 1972, p 27 (from Referativnyy Zhurnal--Aviatsionnyye i Raketnyye Dvigateli, No 1, 1973, Abstract No 1.34.157. Resume)

Translation: A spectral investigation is conducted of the combustion, in rarefied air, of cubic-shaped magnesium particles weighing 40 mg. The optical density of magnesium spectra obtained at pressures, in the chamber, of 22, 70, 106, 332, and 760 torr was measured on an MF-2 microphotometer in the region of 3600-3900 Å. It was noted that magnesium spectra obtained at chamber pressures of 22 and 70 torr differ strongly from the others. At a chamber pressure of 22 and 70 torr the MgO band exceeds the magnesium lines with respect to intensity. At all the remaining indicated pressures a converse pattern is observed -- the magnesium lines exceed the MgO band with respect to intensity. The obtained data permit a conclusion to be drawn concerning the particular

1/2

USSR

KHARKOVSKAYA, E. M., 11-ya Vses. Konf. po Vopr. Ispareniya, Goreniya i Gaz.
Dinamiki Dispersn. Sred, 1972--Sbornik

features of the combustion of magnesium in rarefied air, as well as making
it possible to indicate the primary source of radiation.

2/2

- 20 -

USSR

KHARLAMOV, B. P.

"Point Processes with Arbitrarily and Independent Distribution of Points in Intervals"

Zap. Nauch. Seminarov Leningr. Otd. Mat. In-ta AN SSSR [Writings of Scientific Seminars of Leningrad Division, Mathematics Institute, Academy of Sciences, USSR], 1972, Vol 29, pp 38-41 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V140 by A. Zubkov).

Translation: The author calls a random point process a UNR flow if for any interval Δ and any natural n the conditional distribution of points of the process falling in Δ (if the number of this point is equal to n) coincides with the joint distribution of n independent random quantities, evenly distributed in Δ . It is shown that the class of UNR flows coincides with the class of Poisson processes, the intensity of which is random.

1/1

USSR

KHARLAMOV, B. P.

"Random Replacement of Time and Continuous Semi Markov Processes"

Zap. Nauch. Seminarov Leningr. Otd. Mat. In-ta AN SSSR [Writings of Scientific Seminars of Leningrad Division, Mathematics Institute, Academy of Sciences, USSR], 1972, Vol 29, pp 30-37 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V139 by A. Zubkov).

Translation: Independent random processes $\{\tau_n\}$ ($P\{0 < \tau_1 < \tau_2 < \dots, \tau_n \rightarrow \infty = 1$ and $T(t)$ is a homogeneous process with independent non-negative increments, $T(0) = 0$) can be used to construct a new random process $\{\tau'_n\} = \{T(\tau_n)\}$ using "random replacement of time (RRT)". A definition of continuous semi Markov processes (CSP) introduced by the author earlier (see RZhMat, 1971, 5 V38) is presented, allowing RRT to be applied to them, thus producing new CSP. An example of CSP is a Wienerian process. This article indicates conditions under which CSP can be produced from Wienerian processes using RRT.

1/1

- 19 -

USSR

KHARLANOV, B. P.

"Point Processes with Arbitrarily and Independent Distribution of Points in Intervals"

Zap. Nauch. Seminarov Leningr. Otd. Mat. In-ta AN SSSR [Writings of Scientific Seminars of Leningrad Division, Mathematics Institute, Academy of Sciences, USSR], 1972, Vol 29, pp 38-41 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V140 by A. Zubkov).

Translation: The author calls a random point process a UNR flow if for any interval Δ and any natural n the conditional distribution of points of the process falling in Δ (if the number of this point is equal to n) coincides with the joint distribution of n independent random quantities, evenly distributed in Δ . It is shown that the class of UNR flows coincides with the class of Poisson processes, the intensity of which is random.

1/1

1/2 009 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--THE NORMAL FREEZING OF SILVER NITRATE AND CHLORIDE -U-

AUTHOR--(02)--KOSYAKOV, V.I., KHARLAMOV, M.N.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA SIBIRSKOGO OTDELENIYA AKADEMII NAUK SSSR, NO 4, SERIYA
KHMICHESKIKH NAUK, 1970, NR 2, PP 62-68
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SILVER NITRATE, CHLORIDE, FREEZING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1993/0581

STEP NO--UR/0289/70/000/000/0062/0068

CIRC ACCESSION NO--AP0113472

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0113472

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISTRIBUTION COEFFICIENTS
TWELVE IMPURITIES BY THE NORMAL FREEZING OF SILVER NITRATE AND CHLORIDE
WAS ESTIMATED BY ETALONLESS SPECTRAL ANALYSIS. THE SOLIDIFICATION
PERMITS TO PURIFY SILVER NITRATE FROM INVESTIGATED IMPURITIES ABOUT
CADMIUM. THE PURIFICATION OF SILVER CHLORIDE FROM MOST IMPURITIES IS
UNAFFECTED. FACILITY: INSTITUT NEORGANICHESKOY KHIMII SO AN
SSSR, NOVOSIBIRSK.

UNCLASSIFIED

USSR

UDC 536.532.08

KRASIL'NIKOVA, I. N., NAKS, YU. V., KHARLAMOV, N. I.

"Thermocouples for Measuring Temperatures in a Medium of Dry and Moist Hydrogen"

Elektrotermiya. Nauchno-tekhn. sb. (Electrothermics--scientific and technical collection of works), 1970, vyp 93, pp 7-8 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 8, Aug 70, Abstract No 8.32.609)

Translation: The description, circuits of installation in the furnace and short technical features of thermocouples TVR-0877 and TVR-1338, designed by the L'vov SKB [Spetsial'noye konstruktorskoye byuro--Special Design Bureau] "Termopribor" for measuring high temperatures in electrical furnaces in the atmosphere of dry and moist hydrogen, are given. The range of temperature measurements in (°C) is 300-1800; calibration -- VRN010/20; maximum time lag (sec) TVR-0877 -- 10, TVR-1338 -- 130; the length of submersible part (mm) -- 160, 200, 250, 320, 400 and 500; useful life (hr) 4000; weight of the thermocouple (kg) -- TVR-0877 -- 3, TVR-1338 -- 3.5. The allowable deviations of the thermoelectromotive force of the thermocouple at the temperature of free ends 0° C does not exceed $\pm 1\%$. Change in the $1/2$

- 142 -

USSR

KRASIL'NIKOVA, I. N., et al., Elektrotermiya. Nauchno-tekhn. sb. 1970,
vyp 93, pp 7-8

thermoelectromotive force from the initial value according to the calibration table during the useful life of the thermocouple at 1800° C over a period of 200 hr does not exceed $\pm 1.5\%$. The junction of the thermocouple after 200 hr operation at 1880° C is restored. The junction of thermocouples is shielded by molybdenum sleeve. 2 ill.

V. S. K.

2/2

USSR

UDC 531.1

NOVIKOV, L. Z. and KHARLAMOV, S. A. (Moscow)

"Singularities of the Behavior of a Pendulum With an Elastic Suspension on a Vibrating Base"

Moscow, Mekhanika Tverdogo Tela, No 5, 1973, pp 3-13

Abstract: Consideration of the elastic pliancy of the supports of the axis of rotation of a pendulum, mounted on a vibrating base, makes it possible to ascertain new qualitative singularities of its behavior in addition to the ones previously detected by P. L. Kapitsa and N. N. Bogolyubov in the assumption of absolute rigidity of the suspension. The exact equations of motion of the pendulum are replaced by approximate equations of slow oscillations and fast vibrations in accordance with the idea of A. Yu. Il'shinskiy concerning the representation of a complex oscillatory system by simple systems in restricted frequency ranges.

Along with confirmation of the possibility of stabilization of the upper position of equilibrium of a pendulum within the field of the force of gravity and refinement of the conditions of the origination of such an effect, new inclined positions of equilibrium are discovered, their relationship to the parameters is defined, and an investigation is made of stability in the particular

1/2

USSR

NOVIKOV, L. Z. and KHARLAMOV, S. A., Mekhanika Tverdogo Tela, No 5, 1973,
pp 3-13

cases of vibration of the base that are of practical interest.
7 figures. 1 table. 4 references.

2/2

119

1/2 019 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ANALYSIS OF NEAR THRESHOLD PHOTOPRODUCTION OF CHARGED PIONS BASED
ON DISPERSION RELATIONS -U-

AUTHOR--(05)--ADAMOVICH, M.I., LARIONOVA, V.G., LEBEDEV, A.I., KHARLAMOV,
S.P., YAGUDINA, F.R. K

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(3), 657-68

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--EMISSION THRESHOLD, PHOTONUCLEAR REACTION, PION, GAMMA
SPECTRUM, EXCITATION CROSS SECTION, DISPERSION EQUATION, PARTICLE
PRODUCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1991/1067

STEP NO--UR/0367/70/011/003/0657/0668

CIRC ACCESSION NO--AP0110757

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0110757

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHOTOPRODUCTION OF CHARGED PIONS IN THE NEAR THRESHOLD REGION OF THE PHOTON ENERGY IS INVESTIGATED THEORETICALLY. THE AMPLITUDE AND THE CROSS SECTION OF PHOTOPRODUCTION OF PIONS ON N AND THE AMPLITUDE AND THE DIFFERENTIAL CROSS SECTION FOR PI POSITIVE ON P ARE CALCD. THE RESULTS ARE COMPARED WITH EXPTL. DATA. FACILITY: FIZ. INST. IM. LEBEDEVA, MOSCOW, USSR.

UNCLASSIFIED

ATO037692

NUCLEAR SCI. ABST. 3-70

UK 0000

8581 (CERN-Trans-68-14) PHENOMENOLOGICAL ANALYSIS OF PHOTOPRODUCTION OF CHARGED PIONS ON NUCLEONS IN RANGE OF ENERGIES NEAR THRESHOLD.

Adamovich, M. I.; Larionova, V. G.; Kharlamov, S. P.; Yagudina, F. R. (Akademiya Nauk SSSR, Moscow, Institut Fiziki). Translated by F. Quinquin (CERN, Geneva, Switzerland). From Preprint No. 108. 24p. (In French). Dep. CFSTI (U. S. Sales Only).

Starting from experimental data, the energy dependence of the electric dipole amplitude E_0 and the combination of the amplitudes of the waves $P\Delta = (M_1^+ - M_1^- + 3E_1^-)$ for the mesons (π^+) and (π^-) are determined. The isotopic components $E_0^{(0)}$, $E_0^{(\pm)}$, $\Delta^{(0)}$, $\Delta^{(\pm)}$ are obtained. Experiments on linearly polarized photons allow the determination of the value $(2M_{1+} + M_{1-})$ for two values of the photon energy $E_\gamma = 210$ and 225 MeV. From the threshold values of the amplitudes $E_0(\pi^+)$ and $E_0(\pi^-)$ estimates are derived for the πN interaction constant and for the difference of πN scattering lengths S in the isotopic spin $\frac{1}{2}$ or $\frac{3}{2}$ states. These latter results are examined in conjunction with the estimates obtained from πN scattering. (tr-auth)

19730669